Material Science DESIGN, SYNTHESIS, AND CHARACTERIZATION OF ION-CONTAING COPOLYMERS WITH STIMULI RESPONSIVE BEHAVIOR

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Abstract

Five ampholyte polyacrylamide terpolymers known as AMVALTAC were synthesized via free radical polymerization. They were characterized by ^{1}H and ^{13}C NMR and size exclusion chromatography in conjunction with Multi-Angle Light Scattering (SEC-MALS). Rheological experimentation was conducted, and the relationship between the polymeric structures and their unique physical properties were investigated. Charge density, hydrophylicity, hydrogen-bonding, and spacer groups (how close the ionic group was located in relation to the polymer backbone) all affected the physical properties. These polymers are of interest because of their stimuli responsive behavior and their possible applications in the medical field and oil recovery.

Category

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